Space Weather Forecast

Issued on Friday, 05 August 2022 at 00:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been very low over the past 24 hours with only background level flares. There are currently 3 numbered regions on the disc, two of which are are small, weak and magnetically stable. The largest region on the visible disc continues to be AR3068, which remains stable and magnetically simple. No Earth-directed CMEs (coronal mass ejections) were observed.

Solar Wind / Geomagnetic Activity: Earth is gradually exiting the faster solar winds from a coronal hole on the Sun, with initially elevated solar wind speeds around 500 km/s, which then gradually and erratically declined, having briefly peaked at 517 km/s at 04/0333 UTC. The strength of the magnetic field was weak, with the important north-south component fluctuating weakly. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Very low or low solar activity is likely to continue for today and tomorrow, with a slight chance (10%) of an moderate flare. From day 3 an active region may rotate from the far side onto the visible disc, therefore the probability of significant flares increases slightly.

Solar Wind / Geomagnetic Activity: No CMEs have been assessed as Earth-directed. Initially slightly elevated solar winds will continue to gradually decline through today and most of tomorrow, reaching background levels. Then from late tomorrow (6th) a new enhancement in the solar wind is expected to arrive. Therefore geomagnetic activity should remain Quiet with a chance of Unsettled intervals today and for much of tomorrow (6th), then increasing Unsettled to Active later tomorrow and overnight into day 3 (7th), with a chance of isolated Minor geomagnetic storm intervals occurring. Through day 4 (8th) activity is expected to decline to mainly Quiet levels.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	50	40	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	20	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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